0.00

Memo

QC

Quality Control

											DQA:	Date	e:
NCR:	Yes	/ No				WORK ORDER NON-C	COI	NFORM	MANCE / UPDATE				4
						I					QA Closed:	Date	9:
Work Orde	er:					DISPOSITION			AGA	INST DE	PARTMENT	/PROCESS	
Part f	•					Rework Scrap Use-as-is		r	Machining Smal	tube Fab shing	4	Water Jet d. Eng. Coor. re/Packaging	Engineering Quality Other
NCR I	۷o. ِ					Work Order Update			Large Fab Comp	~ —		Supplier	
Root					Descri	ption of work order update	ı	Initial	Action		Sign &		
Cause		Date	Step	Qty		or Non-conformance	Ch	nief Eng	Description		Date	Verification	QC Inspector
Doc/Data	Ш	i				•							·
Equip/Tooling											·		
Operator									·			<u> </u>	
Material	Ш												
Setup													
Other													
Process ".							1						
Supplier 🙎	1,												
Training													
Unapproved													
						F	AUL	T CATE	GORY				
Landi	ng (Gear			·	General		_			_	_	
		Bending				Bend	L	Grain			Ovalized		Pressure/Forced
		Centre No	ot Concei	ntric to	O/S	BOM/Route		Hardwa	re		Over/Under	tolerance	Temperature/Cure
		Cracks				Broken/Damaged		Inspecti	on Incomplete		Part Incorre	ct [Weld
	П	Crushed/	Crimped			Burrs		Instruct	ions Incomplete/Unclear		Part Lost/M	issing	Wrong Stock Pulled
		Cuffs				Contamination		Mainte	nance		Part Moved	_	
·		Heat Trea	it			Countersink		Mislabe	led		Positioned V	Vrong	
		Inspection	n Strip in	Tube		Cut Too Short	Г	Misread			Power Loss/	Surge	Other
		Ripples in	Bend			Drill Holes		Offset			-	_	

Out of Calibration

Out of Sequence

Outside Dimensions

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drawing

Finish

Work Ordo March-28-13 12				*99			Page 2				
Item ID:	D4093-1			Accept	*N900	040	100) * s	etup Sta	rt *N	C1 *
Revision ID:									Sto	n 44.	~~*
Item Name:	Bracket								50	" ^N	S2*
Start Date:	3/27/13	Start Qty: 6.00	*6*		Cust Item I	D:					
Required Date:	3/27/13	Req'd Qty: 6.00	*6*		Customer:						
Reference:				·							
Approvals:	Process	s Plan:	Date:	Tooling:	Da	ate:	_	R	kun Sta	1/1	R1*
	QC: _		Date:	SPC (Y/N):	Da	ate:			Sto	*N	R2*
Sequence ID/ Work Center II	D	Operation Description		Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130				0.00							
130 Mill Conv				0.00	1. 12	105/11	2				
Conventional Millin	ng Machine	Memo DRILL AN	D C'SINK AS PER DWG	0.00	MSP 13/						• .
132		QC2-Inspect parts off r	nachine FAI/FAIB	0.00							
132			-								
QC Quality Control		Memo		0.00	MUP 13/05	/10				<u>-</u>	

135

135

Quality Control

Memo

QC8- Inspect parts - second check

0.00

\$13-05-10

										•		DQA:	Da	ate:	
NCR:	⁄es	/ No				WORK ORDER NON-C	100	NFORM	AANCE / UP	DATE		QA Closed:	 D:	ate:	-
Manl. Ond						DISPOSITION				AGAINST D		· · · · ·			
Work Orde	21.	ı				Rework			Skid-tube	Crosstube			Water Jet	t 🗀	Engineering
Part N	No.					Scrap Use-as-is	Machining Small Fab				Prod. Eng. Coor. Rec/Store/Packaging			Quality	
NCR I	۱o. ِ	Work Order Update							noforming Large Fab	Finishing Composite	1	Rec/Stor	e/Packaging Suppliei	-	Other
Root						ption of work order update	i	Initial		tion	Ţ	Sign &	•		
Cause		Date	Step	Qty	C	or Non-conformance	Ch	nief Eng	Descr	ription	╛	Date	Verification	<u>n</u>	QC Inspector
Doc/Data													•		
Equip/Tooling						•			•						
Operator		1			:						1				
Material											۱				
Setup						•									
Other						-									•
Process			1												
Supplier											1				
Training															
Unapproved											⅃				
							AUL	LT CATE	GORY						
Landi	ng G	ear				General		,			_			_	1
ર		Bending				Bend	<u></u>	Grain			-	Ovalized		_	Pressure/Forced
		Centre No	ot Conce	ntric to	o/s	BOM/Route		Hardwa	re		╛	Over/Under	tolerance	\perp	Temperature/Cure
		Cracks				Broken/Damaged	L	Inspecti	on Incomplete		_	Part Incorrec	t	\perp	Weld
*	Crushed/Crimped Burrs				L	Instruct	ions Incomplete/l	Unclear	╛	Part Lost/Mis	ssing	L	Wrong Stock Pulled		
		Cuffs				Contamination	Maintenance				Part Moved				
		Heat Trea	at			Countersink		Mislabe	led		Positioned Wrong		-		
		Inspectio	n Strip in	Tube		Cut Too Short	<u> </u>				Power Loss/S	Surge		Other	

Offset

Out of Calibration

Out of Sequence

Outside Dimensions

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Ripples in Bend

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drill Holes

Drawing

Finish

Work Ord		0123		*991	23*		·		Page 3
Item ID: Revision ID: Item Name:	D4093-1 Bracket	·		Accept	*N900040	ገ1በበ	* Setup	Start Stop	*NS1* *NS2*
Start Date: Required Date: Reference:	3/27/13 : 3/27/13	Start Qty: 6.00 Req'd Qty: 6.00	*6* *6*		Cust Item ID: Customer:				
Approvals:	Process P	lan:	Date:	Tooling: _ SPC (Y/N):	Date:		Run ,	Start Stop	*NR1* *NR2*
Sequence ID/ Work Center I	D D	Operation Description		Set Up/ Run Hours	Tool ID Tool		Accept Re Qty Qt		Reject Insp. Number Stamp
*140 *140* HandFinish Hand Finishing		Chemical Conversion Coa	it per QS1005 4.1	0.00		-	12	RE	\$135 N
*160	•	QC7-Inspect Chemical Co	onversion Coat	0.00		,	12 b	· /	3-5- /3 93
QC Quality Control		Memo ∴		0.00			у <u> —</u> р	/ \	
170 * 17 0*		Identify as per dwg & Sto	ck Location $\mathcal{L}\mathcal{A}$	0.00			12×		Kil
Packaging		Memo		0.00		_			jwja

Memo.

Packaging

								DQA:	Date	e:
NCR: Y	es / No			WORK ORDER NON-C	CONFO	RMANCE / UP	DATE	QA Closed:	 Date	2:
Work Orde	ŗ.			 DISPOSITION		.·	AGAINST DE	PARTMENT	/PROCESS	
Part N	lo			Rework Scrap Use-as-is Work Order Update	The	Skid-tube Machining ermoforming Large Fab	Crosstube Small Fab Finishing Composite	}	Water Jet d. Eng. Coor. re/Packaging Supplier	Engineering Quality Other
Root Cause	Date	Step	Qty	ption of work order update or Non-conformance	Initia Chief E	· ·	tion cription	Sign & Date	Verification	QC Inspector
Doc/Data Equip/Tooling Operator Material Setup Other Process Supplier Training Unapproved										
*		-		 F	AULT CA	TEGORY			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Landir	Cracks Crushed, Cuffs Heat Tre Inspection Ripples i Torque Turning	on Strip in n Bend Waves in I Sequence	Tube Extrusio	General Bend BOM/Route Broken/Damaged Burrs Contamination Countersink Cut Too Short Drill Holes Drawing Finish	Inspi Instr Mai Misl Misr Offso Out	lware ection Incomplete uctions Incomplete/ ntenance abeled ead et of Calibration of Sequence	'Unclear	Ovalized Over/Under Part Incorred Part Lost/Mi Part Moved Positioned W Power Loss/	ct issing Vrong	Pressure/Forced Temperature/Cure Weld Wrong Stock Pulled Other
Ī	—	wist in Tul		Folio	Outs	ide Dimensions				

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

	Work Order ID 99123 March-28-13 12:47:01 PM			*99123*								
Revision ID:	D4093-1 Bracket			Accept	*N900	040100	* Se	tup Start Stop	*NS1* *NS2*			
Start Date: Required Date: Reference:	3/27/13 3/27/13	Start Qty: 6.00 Req'd Qty: 6.00	*6* *6*		Cust Item I Customer:	D:		·				
Approvals:	Process QC:	Plan:	Date:	Tooling: SPC (Y/N):		ate:	Rı	ın Start Stop	*NR1* *NR2*			
Sequence ID/ Work Center II 180)	Operation Description QC21- Final Inspection	Work Order Release	Set Up/ Run Hours 0.00	Tool ID	Tool # Plan Code	Accept Qty	•	Reject Insp. Number Stamp			
180 QC Quality Control		Мето		0.00			l	7/2/				

											DQA:	Date	e:
NCR: Y	es /	' No	ļ [WORK ORDER NON-C	O	NFORM	MANCE / UP	DATE	QA Closed:	Date	· ·
			! 				-		.				
Work Orde	er:		<u>'</u>			DISPOSITION				AGAINST DE	PARTMENT	/PROCESS	
						Rework	1		Skid-tube	Crosstube] .	Water Jet	Engineering
Part N	No.	ļ				Scrap	1		Machining	Small Fab	Pro	d. Eng. Coor.	Quality
						Use-as-is	1 1	Therm	noforming	Finishing	Rec/Sto	re/Packaging	Other
NCR N	No					Work Order Update			Large Fab	Composite]	Supplier	
													· · · · · · · · · · · · · · · · · · ·
Root					-	ption of work order update		nitial		tion	Sign &		
Cause		Date !	Step	Qty	C	or Non-conformance	Ch	ief Eng	Desci	ription	Date	Verification	QC Inspector
Doc/Data													
Equip/Tooling	Ш								-				
Operator	Ш	1					İ		:				
Material	Щ							·	i				
Setup	Ш	1											
Other	Н												
Process	Н												
Supplier	\vdash		1										
Training	\vdash						1		•				
Unapproved	<u> </u>	!	L	<u> </u>		E		T CATE	GORY		L	<u> </u>	<u> </u>
Landi	ng Ge	ar				General		CAIL					
		ending				Bend		Grain			Ovalized	Γ	Pressure/Forced
	—	Ť	ot Conce	ntric to	o/s	BOM/Route		Hardwa	re		Over/Under	tolerance	Temperature/Cure
	\prod_{c}	racks	je ^t			Broken/Damaged		Inspecti	on Incomplete		Part Incorre	ct [Weld
	\Box c	rushed/	Crimped			Burrs		Instruct	ions Incomplete/	Unclear	Part Lost/Mi	ssing	Wrong Stock Pulled
		uffs				Contamination		Mainte	nance		Part Moved		
	Шн	leat Trea	it			Countersink		Mislabe	led		Positioned V	Vrong	-
	lr	nspection	n Strip in	Tube		Cut Too Short		Misread	i		Power Loss/	Surge	Other
	R	ipples in	Bend			Drill Holes		Offset					
	т	orque W	aves in E	Extrusio	n	Drawing		Out of 0	Calibration				

Out of Sequence

Outside Dimensions

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Turning Sequence

Wave/Twist in Tube

Finish

March-28-13 12:47:01 PM

Work Order ID:

99123

Parent Item:

D4093-1

Parent Item Name:

Bracket

Start Date: 3/27/13

Required Date: 3/27/13

Start Qty: 6.00

Required Qty: 6.00

Comments:

Ipp Rev:A New Issue 10-05-31 JLM Verified By:DD IPP REV:B AS PER REV C 11.09.28 JLM VERIFIED BY:DD IPP REV:C 12.10.31 AS PER DWG REV.C DD VERF:JLM

	11.07.28 JENT VE	CITIED DT.DD	11 1 101	JV.C 12.10.J1	715 I LIK D W	O ICL V.C DI		1 1 1					
Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6B0.750X06.000		Purchased	No				f	57.5000		3.663157	8 N	13.0	5.01
6061T6 BAR .750 X 6.00									•				
				Location		Loc Qty	<u>Lo</u>	c Code				•	٠,
				MAT005		57.5							
				1208	366	36							
				1213	880	21.5							

NCR: Y	'es	/ No				WORK ORDER NON-C	CO	VFOR	MANCE / UPI	DATE			
											QA Closed:	Date:	
Work Orde	er: _		†			DISPOSITION	,				EPARTMENT,	·	1
Part N	-	· · · ·			<u> </u>	Rework Scrap Use-as-is Work Order Update			Skid-tube Machining noforming Large Fab	Crosstube Small Fab Finishing Composite		Water Jet d. Eng. Coor. re/Packaging Supplier	Engineering Quality Other
Root			1		Descri	ption of work order update		nitial	Act	ion	Sign &		
Cause		Date	Step	Qty		or Non-conformance	Ch	ief Eng	Descr	ription	Date	Verification	QC Inspector
Doc/Data Equip/Tooling Operator Material Setup Other Process Supplier Training Unapproved													
10 11 10						 	AUL	T CATE	GORY				
Landi		Bending Centre I Cracks Crushec Cuffs Heat Tru Inspecti Ripples Torque	Not Conce I/Crimped eat on Strip ir	n Tube Extrusio		General Bend BOM/Route Broken/Damaged Burrs Contamination Countersink Cut Too Short Drill Holes Drawing Finish		Instruct Mainte Mislabe Misread Offset Out of 0	ion Incomplete ions Incomplete/U enance eled	Jnclear	Ovalized Over/Under Part Incorred Part Lost/Mi Part Moved Positioned W Power Loss/	ct ssing Vrong	Pressure/Forced Temperature/Cure Weld Wrong Stock Pulled Other

Outside Dimensions

DQA:

Date:

Wave/Twist in Tube

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

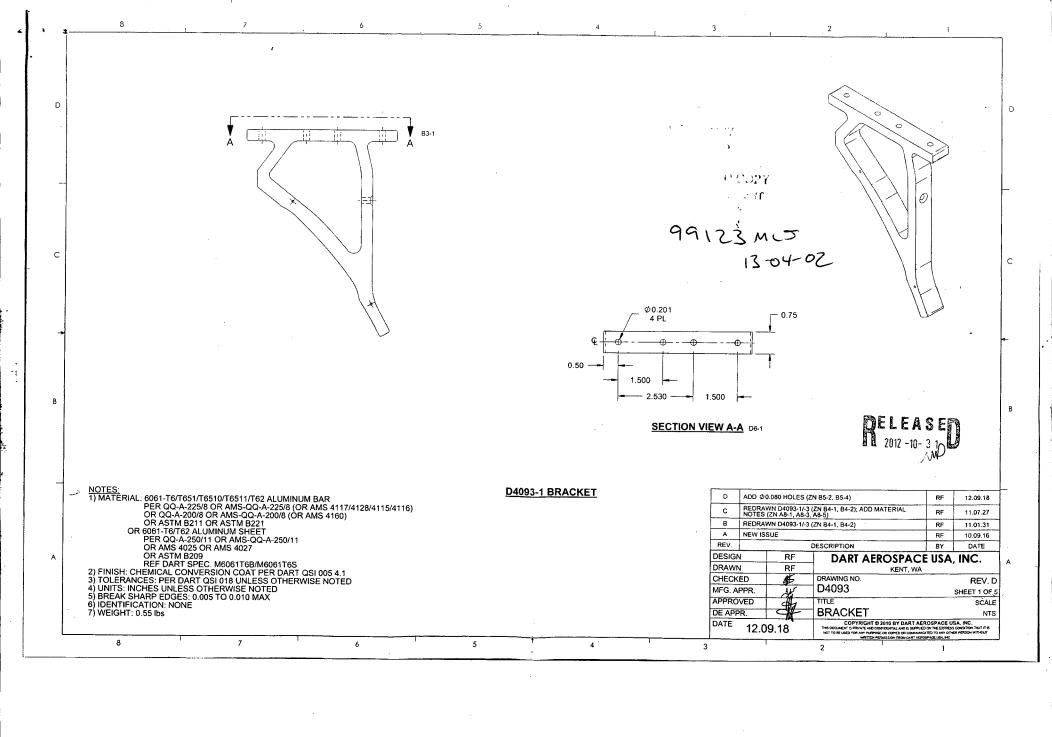
DART AEROSPACE LTD	Work Order:	99123
Description: Bracket	Part Number:	D4093-1
Inspection Dwg: D4093 Rev: ED		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

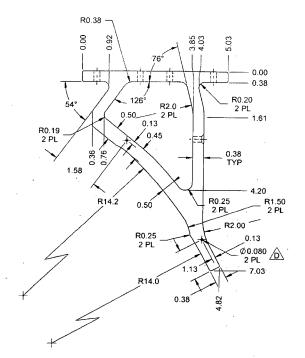
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.92	+/-0.030	6.92	1		V	TKM-01
3.85	+/-0.030	3.85	/		V	
4.03	+/-0.030	4.03	V		7	TKM-06
5.03	+/-0.010	5.001	/		V	
0.36	+/-0.010	0.350	V		ン	
0.76	+/-0.030	0.724	ſ		V	
4.82	+/-0.030	4.813	Ĵ		\checkmark	
0.38	+/-0.030	0.369	\ \		V	,
4.20	+/-0.030	4.206	1		V	
7.03	+/-0.030	7.011	√		Ÿ	
0.750	+/-0.010	0.755	$\sqrt{}$		\/	
1080	4.00/					
easured by:		Audited by:	S		Preliminary A	oproval:

modelica by. Mini	Addited by.		riemmary Approvai.	
Date: 13.05:01/	Date:	13-05-10	Date:	
Rev Date Change			Revised by A	Approved

Rev	Date	Change	Revised by A	Approved
Α	11.10.13	New Issue	KJ KJ	I XX
			7/1	(/ \



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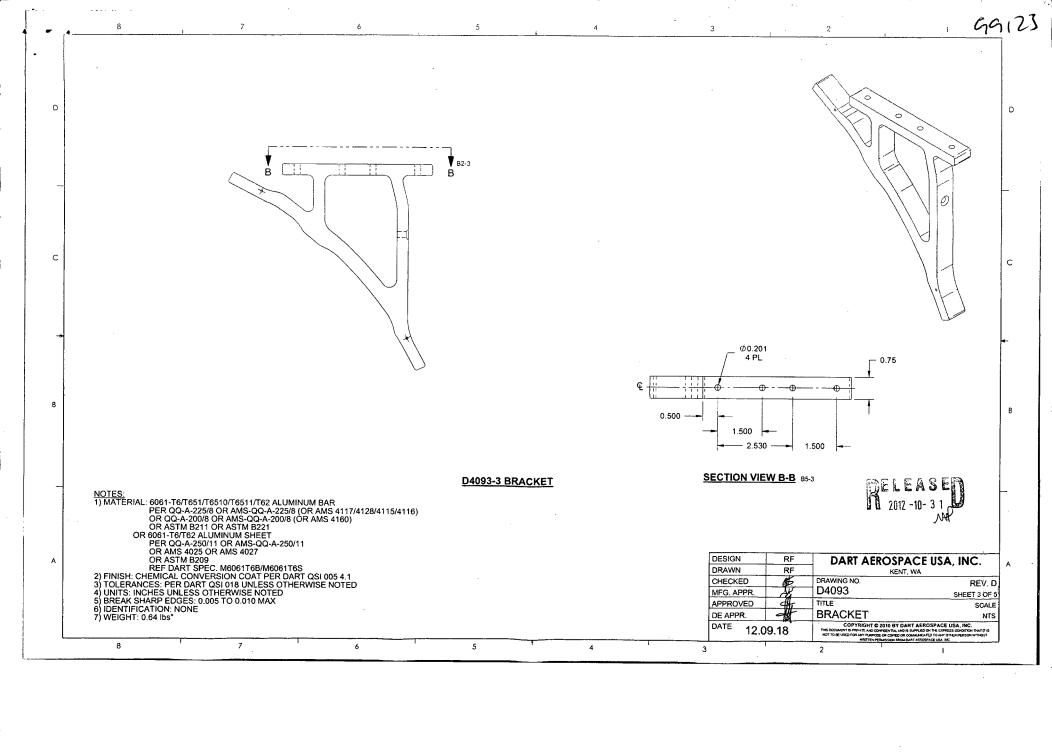


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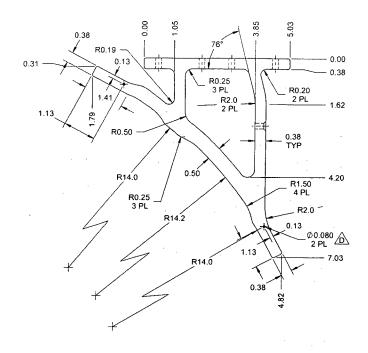
Ø0.201 -C'SINK Ø0.370 x 100° CHAMFER

D4093-1 BRACKET

DESIGN	RF	DART AEROSPACE USA, INC.		
DRAWN	RF			
CHECKED	15	DRAWING NO.	REV. D	
MFG. APPR.	J.	D4093	SHEET 2 OF	
APPROVED	41	TITLE	SCALE	
DE APPR.		BRACKET	NTS	
DATE 12.0	9.18	COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS EMPILED ON THE EMPRESS CONSTRON THAT IT IS NOT TO BE USED TO AN PURPOSE OF COMPRISON ACTED TO ANY OTHER PRESON WITHOUT		

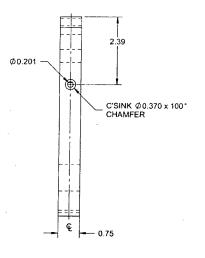


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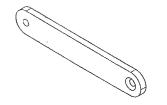
D4093-3 BRACKET

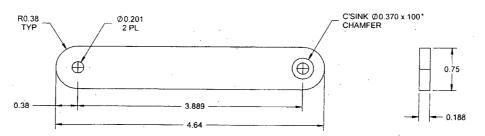


DESIGN RF		DART AEROSPACE USA, INC.				
DRAWN	RF .	KENT, WA				
CHECKED	A.S.	DRAWING NO.	REV. D			
MFG. APPR.	74	D4093	SHEET 4 OF 5			
APPROVED	Ala	TITLE	SCALE			
DE APPR.		BRACKET	NTS.			
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D4093-5 BRACKET

NOTES:
1) MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR
PER QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221
OR 6061-T6/T62 ALUMINUM SHEET
PER QQ-A-250/11 OR AMS-QQ-A-250/11
OR AMS 4025 OR AMS 4027
OR ASTM B209
OR ASTM B209
2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
3) TOLERANCES: PER DART OSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 0.06 ibs

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DESIGN ·	RF	DART AEROSPA	DART AEROSPACE USA, INC.		
DRAWN	RF	KENT, WA			
CHECKED	45	DRAWING NO.	REV. D		
MFG. APPR.	J.	D4093	SHEET 5 OF 5		
APPROVED	4	TITLE	SCALE		
DE APPR.		BRACKET	NTS		
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DART AEROSPACE LTD	Work Order:	99123	
Description: Bracket	Part Number:	D4093-1	
Inspection Dwg: D40 93 Rev: D		Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
20,201	+ 0,005	0,205	/		MJP-04	vern
0,500	= 0,010	0,497	/		/11	111
1,500	+ 0,010	1,498	V	·	<i>i</i> 1 c	(1)
2,530	+ 0,010	2,529	1		111	111
1,500	+ 0,010	1,497	/		111	//(
0,750	= 0,030	0.753	/		+11	//1
. j, 39	+ 0,030	2,393	/		31006	Height Gage
Q 0,370/100°		50 0,365/1000			MSP-04	vern
1,58	± 0,030	1,591			6/1	717
0,13	± 0,030	0,155	V		111	111
1, 13	± 0,030	1,158	1		111	//(
0,13	± 0.030	0,159	/		111	7/1
90,080	+ 0,004	0,083	/		7/1	(11
·	,					·
		•				
			٠,			
				· -		
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			0.4			
Measured by:	MUP BA	Audited by:	St	Pre	liminary Approval:	
Date:	13/05/09	Date:	13-05-10		Date:	

Rev	Date	Change	Revised by	Approved
E	10.04.14	Added preliminary approval	KJ	

\$ 10.04.15

to P to P Down Down